

CLAIMS

1. A membrane switch comprising a flexible membrane forming a movable part of the switch, the flexible membrane comprising an electroluminescent display.

2. The switch of claim 1, in which the electroluminescent display forms a front surface of the switch, whereby a user may apply pressure to the switch to actuate the switch.

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3. A push or button switch comprising:

an underlying circuit layer carrying a circuit which the switch is to operate, the circuit being broken by a gap which the switch is to close;

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a resiliently-deformable contact layer, mounted to face the circuit layer's circuit face, the contact layer's circuit-facing surface carrying a conductive bridge portion aligned with the gap, which bridge portion can be resiliently pushed into operative contact with the circuit layer to close the gap therein so long as an applied pushing force is present; and

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spacing means that keeps the two layers apart in the absence of any applied force pushing them together,

25 in which the contact layer comprises an electroluminescent display.

4. The switch of claim 3, in which the bridge portion is carried directly on the electroluminescent display.

30 5. The switch of claim 4, in which a discrete contact bridge layer is provided as part of the contact layer, the contact bridge layer carrying the bridge portion.

6. The switch of any of claims 3 to 5, in which the switch is arranged such that force can be exerted on the contact layer by a user to operate the switch.
- 5 7. The switch of claim 6, arranged so that a user may exert a force on the electroluminescent display.
8. The switch of any of claims 3 to 7, in which the contact layer is floating in that over its area it is not secured in any significant way to the circuit layer, but may relatively freely move with respect thereto.
- 10 9. The switch of any of claims 3 to 7 in which the contact layer is held relative to the circuit layer at its edges, so as to prevent it slipping sideways away from the circuit layer.
- 15 10. The switch of any of claims 3 to 9 in which the spacing means is integral with one or other of the circuit layer or the contact layer.
- 20 11. The switch of claim 10 in which the spacing means is an integral part of the contact layer.
12. The switch of claim 10 or claim 11 in which the spacing means is formed into the contact layer.
- 25 13. The switch of claim 12 in which the spacing means is formed into the contact layer or the circuit layer by thermoforming, printing, stamping as one or more bumps, dents or ridges.
- 30 14. The switch of any one of claims 10 to 13 comprising a peripheral ridge extending all around the bridge portion, forming a perimeter to that area of the layer.

15. The switch of any one of claims 3 to 9, in which the spacing means comprises at least one discrete spacer.

5 16. A push, or button, switch of the non latching, momentary, type, which switch comprises:

an underlying circuit layer carrying the circuit which the switch is to operate, the circuit being "broken" by a gap which the switch is to close;

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a resiliently-deformable floating contact layer, mounted to face the circuit layer's circuit face, the contact layer's circuit-facing surface carrying a conductive bridge portion aligned with the gap, which bridge portion can be resiliently pushed into operative contact with the circuit layer to close the gap therein so long as the applied pushing force is present; and

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spacing means that keeps the two layers apart in the absence of any applied force pushing them together,

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in which the spacing means is integral with one or other of the contact and circuit layers

17. A switch according to claim 16 in which the spacing means is an integral part of the contact layer.

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18. An array comprising a plurality of switches according to any preceding claim.

19. The array of claim 18 when dependent from any of claims 3 to 17, the switches sharing a single common circuit layer and a single common contact layer.

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20. An array according to claim 19, in which the circuit layer and the contact layer are held together around their peripheries, but are not secured over their facing areas.